



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,740	08/10/2001	Takuya Yamamoto	108384-00030	6658

6449 7590 06/02/2004

ROTHWELL, FIGG, ERNST & MANBECK, P.C.
1425 K STREET, N.W.
SUITE 800
WASHINGTON, DC 20005

EXAMINER

NGUYEN, KHIEM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,740

Applicant(s)

TAKUYA YAMAMOTO

Examiner

Khiem D Nguyen

Art Unit

2823

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-26 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 23-26 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group 2 claims 5-22 in Paper received September 22nd, 2003 is acknowledged.

Claim Objections

Claims 5 and 11 are objected to because of the following informalities:

In re claim 5, line 9, delete "recrystallized", and insert "recrystallized".

In re claim 11, line 11, delete "recrystallized", and insert "recrystallized".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is objected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, line 10. It is unclear what "not recrystallized" mean? Is the applicant implying melting the copper?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 5, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashiba et al. (U.S. Patent 5,153,077).

In re claim 5, Kashiba discloses a process for producing a copper clad laminate comprising, providing an insulation layer (**FIG. 1: 1**) constituent material having a first and a second side, coating the first side with a first copper foil (**FIG. 1: 2a**) of a first thickness, coating the second side with a second copper foil (**FIG. 1: 2b**) of a second thickness to produce an insulation layer constituent material, first copper foil and second copper foil assembly, wherein the thickness of the second foil is greater than the thickness of the first foil, hot pressing the assembly to produce the laminate, wherein the first copper foil is not recrystallized during the hot pressing, and wherein the second copper foil is recrystallized during the hot pressing. The second foil 2b has the property of being recrystallized under the conditions that exist during a hot pressing step in the manufacturing of the laminate and thus thicker than the first foil (col. 5, line 48 to col. 6, line 39 and col. 9, line 43 to col. 10, line 33 and **FIGS. 1-14c**).

In re claim 7, Kashiba discloses wherein the insulation layer constituent material is a resin (col. 9, lines 43-61).

In re claim 9, Kashiba discloses wherein the second copper foil is a S-THE foil (col. 5, lines 49 to col. 6, line 39).

In re claim 10, Kashiba discloses wherein, after hot pressing the Young's modulus of the first copper foil is 1.1 times more than the Young's modulus of the second copper foil (col.9, line 43 to col. 10, line 33).

Art Unit: 2823

2. Claims 11, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashiba et al. (U.S. Patent 5,153,077).

In re claim 11, Kashiba discloses a process for producing a copper clad laminate comprising, providing an insulation layer (**FIG. 1: 1**) constituent material having a first and a second side, coating the first side with a first copper foil (**FIG. 1: 2a**) of a first thickness, coating the second side with a second copper foil (**FIG. 1: 2b**) of a second thickness to produce an insulation layer constituent material, first copper foil and second copper foil assembly, wherein the thickness of the second foil is greater than the thickness of the first foil, hot pressing the assembly to produce the laminate, wherein the first and second copper foils are recrystallized during the hot pressing, wherein the second copper foil is more recrystallized than the first copper foil. The second foil 2b has the property of being recrystallized under the conditions that exist during a hot pressing step in the manufacturing of the laminate and thus thicker than the first foil (col. 5, line 48 to col. 6, line 39 and col. 9, line 43 to col. 10, line 33 and **FIGS. 1-14c**).

In re claim 13, Kashiba discloses wherein the insulation layer constituent material is a resin (col. 9, lines 43-61).

In re claim 15, Kashiba discloses wherein the second copper foil is a S-THE foil (col. 5, lines 49 to col. 6, line 39).

In re claim 16, Kashiba discloses wherein, after hot pressing the Young's modulus of the first copper foil is 1.1 times more than the Young's modulus of the second copper foil (col. 9, line 43 to col. 10, line 33).

3. Claims 17, 19, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashiba et al. (U.S. Patent 5,153,077).

In re claim 17, Kashiba discloses a process for producing a copper clad laminate, providing an insulation layer (**FIG. 1: 1**) constituent material having a first and a second side, coating the first side with a first copper foil (**FIG. 1: 2a**) of a first thickness, coating the second side with a second copper foil (**FIG. 1: 2b**) of a second thickness to produce an insulation layer constituent material, first copper foil and second copper foil assembly, wherein the thickness of the second foil is greater than the thickness of the first foil, hot pressing the assembly to produce the laminate, wherein the first and second copper foils contract during hot pressing, wherein the second copper foil contracts to a larger extent than the first copper foil during hot pressing. The second foil 2b has the property of being recrystallized under the conditions that exist during a hot pressing step in the manufacturing of the laminate and thus thicker than the first foil (col. 5, line 48 to col. 6, line 39 and col. 9, line 43 to col. 10, line 33 and **FIGS. 1-14c**).

In re claim 19, Kashiba discloses wherein the insulation layer constituent material is a resin (col. 9, lines 43-61).

In re claim 21, Kashiba discloses wherein the second copper foil is a S-THE foil (col. 5, lines 49 to col. 6, line 39).

In re claim 22, Kashiba discloses wherein, after hot pressing the Young's modulus of the first copper foil is 1.1 times more than the Young's modulus of the second copper foil (col. 9, line 43 to col. 10, line 33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 8, 12, 14, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiba et al. (U.S. Patent 5,153,077).

In re claims 6, 12, 18, there is no evidence indicating the thickness ratio between the first and second foils is critical and it has been held that it is not inventive to discover the optimum or workable range of a result-effective variable within given prior art conditions by routine experimentation. See MPEP § 2144.05. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

In re claims 8, 14, 20, there is no evidence indicating that the contract percentage of the second copper foil, the pressing conditions temperature and the time duration is critical and it has been held that it is not inventive to discover the optimum or workable range of a result-effective variable within given prior art conditions by routine experimentation. See MPEP § 2144.05.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.
May 27, 2004



**W. DAVID COLEMAN
PRIMARY EXAMINER**